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# PATENT ABSTRACTS OF JAPAN

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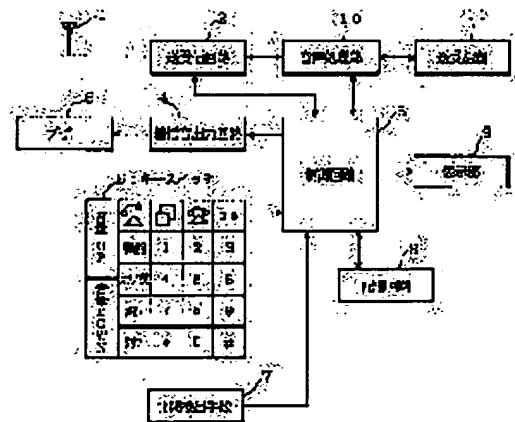
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## (54) PORTABLE TELEPHONE SET WITH AUTOMATICALLY ADJUSTING FUNCTION FOR INCOMING TONE

### (57) Abstract:

PURPOSE: To provide a portable telephone set with incoming tone automatic adjustment function which stops the incoming tone or reduces its sound volume immediately after incoming.

CONSTITUTION: An open/close detection means 7 which detects that the foldable body of the title set is opened is provided, and the incoming tone is stopped or its sound volume is reduced when it is detected that the body is opened. Plural keys provided for transmission, setting, and the other various controls may be temporarily assigned as keys, which output a signal to stop the incoming tone or reduce its sound volume, at the time of incoming, thereby stopping the incoming tone or reducing its sound volume by the operation of some key.



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**CLAIMS**

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**[Claim(s)]**

[Claim 1] The portable telephone with a ringer tone regulating function characterized by to have the control means to which the ringer tone outputted by said ringer tone output means is stopped, or this sound volume is reduced when it is detected that said body was opened by the foldable body, ringer tone output means output a ringer tone, closing-motion detection means detect that said body was opened, and said closing-motion detection means.

[Claim 2] Two or more keys for performing transmission, setup, and various other control, and a ringer tone output means to output a ringer tone, When it has the control means temporarily assigned as a key to which the signal to which a ringer tone is stopped for said two or more keys, or this sound volume is reduced at the time of arrival of the mail is made to output and it is operated at the time of arrival of the mail any of said two or more keys they are The portable telephone with a ringer tone regulating function characterized by stopping the ringer tone from said ringer tone output means, or reducing this sound volume.

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

[0001]

[Industrial Application] Especially this invention relates to the portable telephone with a ringer tone regulating function for stopping a ringer tone or reducing the sound volume about a portable telephone.

[0002]

[Description of the Prior Art] in a portable telephone, it prepares for being inconvenient and there are an answer hold (please wait for a while -- etc. -- a message is transmitted to the other party) and a thing which has the function of arrival-of-the-mail refusal in answering immediately all over a meeting etc. at the time of arrival of the mail. In this case, after arrival of the mail, the user of a portable telephone checked a transmitting person's telephone number displayed on the display, judged that urgency etc., operated the call-in response immediately according to that decision, did actuation of an answer hold or arrival-of-the-mail refusal, or had ignored arrival of the mail.

[0003]

[Problem(s) to be Solved by the Invention] However, the ringer tone which tells arrival of the mail in this case had the fault of continuing sounding until it operates said call-in response, an answer hold, etc. after a user gets to know there having been arrival of the mail. On the other hand, although lowering a ringer tone immediately after arrival of the mail by carrying out the depression of the sound-volume carbon button was performed, it was many times or needed [ which is returned to the original sound volume while having to continuing carrying out a fixed time amount depression and operability's being bad ] in a sound-volume carbon button, although sound volume is lowered, and complicated to extent which a ringer tone does not worry.

[0004] Moreover, the carbon button made to stop a ringer tone was prepared, and although there were some which stop a ringer tone after arrival of the mail by carrying out the depression of this carbon button (JP,2-305248,A), there was a fault for which the carbon button of dedication is needed.

[0005] In addition, although JP,64-85454,A and JP,4-132763,U are one of things relevant to this invention in addition to this, these do not solve the above-mentioned fault, either.

[0006] This invention carries out the purpose of the offer of the portable telephone with a ringer tone regulating function to which it can be made that the above-mentioned conventional technical problem should be solved, and a ringer tone can be immediately stopped after arrival of the mail, or the sound volume can be reduced.

[0007]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, when it is detected that said body was opened by the body which the portable telephone with a ringer tone regulating function of this invention can fold up, ringer tone output means output a ringer tone, closing-motion detection means detect that said body was opened, and said closing-motion detection means, it has considered as the configuration which it had in the control means to which the ringer tone outputted by said ringer tone output means stops, or this sound volume reduces.

[0008] Moreover, two or more keys for this invention to perform transmission, setup, and various other

control, It has the control means temporarily assigned as a key to which the signal to which a ringer tone is stopped for said two or more keys, or this sound volume is reduced at a ringer tone output means to output a ringer tone, and the time of arrival of the mail is made to output. When it is operated at the time of arrival of the mail any of said two or more keys they are, the ringer tone from said ringer tone output means is stopped, or this sound volume is reduced, and it has considered as the configuration.

[0009]

[Function] A closing motion detection means will detect this and this invention equipped with said closing motion detection means by such configuration will output a signal to a control means, if the body of a portable telephone is opened at the time of arrival of the mail. A control means reduces the amount of ringer tones to the sound volume which was made to stop the ringer tone outputted from a ringer tone output means based on this signal, or was set up beforehand.

[0010] Moreover, this invention which comes to assign said two or more keys to volume control reduces the amount of ringer tones to the sound volume which the ringer tone was stopped or was set up beforehand by operating any of two or more keys they are at the time of arrival of the mail.

[0011]

[Example] Next, the example of this invention is explained with reference to a drawing. Drawing 1 is the block diagram of the first example of a portable telephone with this invention ringer tone regulating function. While the portable telephone of this example has a foldable body in drawing The control circuit 3 which performs various control of a portable telephone, such as the transceiver circuit 2 which performs an antenna 1 and radio, transmit/receive control, speech processing control, and a display control, the ringer tone output circuit 4, a buzzer 5, transmission, It has the store circuit 8 and display 9 which memorize various data, such as a key switch 6, the telephone number, etc. which consist of two or more keys for performing setup and various other control, and a setup, the speech processing section 10 which carries out digital conversion of the sound signal, or changes a digital signal into a sound signal, and a headset 11.

[0012] If the incoming call appearance signal from a base station is detected by an antenna 1 and the transceiver circuit 2, a control circuit 3 will drive the ringer tone output circuit 4, and will output a ringer tone from a buzzer 5. It can come, simultaneously a control circuit 3 outputs an arrival-of-the-mail display to a display 9. In this case, when an addresser's identification code (addresser ID) is contained in the input signal, the identifier beforehand set as the store circuit 8 corresponding to that code can be displayed on a display 9. or [ whether an addressee looks at the identifier and the telephone number which were displayed on the display 9, and answer arrival of the mail, or it puts on hold, or that it refuses ] -- or it judges whether it ignores.

[0013] In drawing 1 , 7 is a closing motion detection means and it detects that the foldable body was opened. The photosensor which detects light when the microswitch and body which are opened and closed with closing motion of the body of a portable telephone open, the encoder which detects the aperture include angle of a body can constitute the closing motion detection means 7 using a known means. Detection of what the body of a portable telephone opened with the closing motion detection means 7 outputs a detecting signal to a control circuit 3.

[0014] It memorizes the value, in memorizing beforehand a setup of whether a ringer tone is stopped or to reduce sound volume and reducing sound volume to it, when a portable telephone is opened in said store circuit 8. A setup can also be constituted so that a user can do it by actuation of a key switch 6, and it can also be set up at the time of factory shipments. Moreover, when a portable telephone opens without memorizing such a setup, it can also constitute so that a ringer tone may always be stopped.

[0015] A control circuit 3 will control the ringer tone output circuit 4 based on a setup memorized in the store circuit 8, if the detecting signal from the closing motion detection means 7 is received. That is, when the output from the ringer tone output circuit 4 to a buzzer 5 is stopped when a setup of a store circuit 8 is a ringer tone halt, and a setup has predetermined sound volume, the ringer tone output circuit 4 is adjusted to the sound volume.

[0016] Next, the actuation at the time of the arrival in the portable telephone concerning this example is explained. If an incoming call appearance signal is detected by an antenna 1 and the transceiver circuit

2, the ringer tone output circuit 4 will drive and a ringer tone will be outputted from a buzzer 5. If a user hears this ringer tone and opens the body of a portable telephone, the closing motion detection means 7 will detect this, and will output a signal to a control circuit 3. A control circuit 3 reduces the amount of ringer tones to the sound volume which was made to stop the ringer tone immediately outputted from the ringer tone output circuit 4 based on this signal, or was set up beforehand. or [ whether in a halt or the condition of having become small, a ringer tone checks the addresser information displayed on the display 9, and answers arrival of the mail, or a user puts on hold, or that he refuses ] -- or it judges whether it ignores.

[0017] Next, the second example of this invention is explained along with drawing 2 . In drawing, an antenna 1, the transceiver circuit 2, the ringer tone output circuit 4, a buzzer 5, a key switch 6, a store circuit 8, a display 9, the speech processing section 10, and a headset 11 are the same configurations as said first example. A control circuit 3 is temporarily assigned as a key to which the signal to which a ringer tone is stopped for two or more keys of said key switch 6, or this sound volume is reduced like said example in addition to performing various control of a portable telephone, such as transmit/receive control, speech processing control, and a display control, at the time of arrival of the mail is made to output. In this case, the target key is made to register into a store circuit 8. Consequently, if it is pushed at the time of arrival of the mail any of two or more keys of a key switch 6 they are and a signal is outputted to a control circuit 3, a control circuit 3 will reduce a ringer tone to the sound volume which was made to stop the ringer tone from the ringer tone output circuit 4, or was set up beforehand. In addition, since actuation of a key switch 6 performs a halt of a ringer tone etc. in this example, the body of a portable telephone may be folded up like said example, and may be the thing of a formula, or may not be so.

[0018]

[Effect of the Invention] According to this invention which consists of the above configurations, the following effectiveness is acquired.

- (1) In invention according to claim 1, the body of a portable telephone of a fold-up formula is only opened, and a ringer tone can reduce a halt or its sound volume.
- (2) In invention according to claim 2, since a ringer tone can reduce a halt or its sound volume by operating the carbon button of arbitration, without being conscious of pushing a specific carbon button, operability is good.

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**TECHNICAL FIELD**

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**[Industrial Application]** Especially this invention relates to the portable telephone with a ringer tone regulating function for stopping a ringer tone or reducing the sound volume about a portable telephone.

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**PRIOR ART**

[Description of the Prior Art] in a portable telephone, it prepares for being inconvenient and there are an answer hold (please wait for a while -- etc. -- a message is transmitted to the other party) and a thing which has the function of arrival-of-the-mail refusal in answering immediately all over a meeting etc. at the time of arrival of the mail. In this case, after arrival of the mail, the user of a portable telephone checked a transmitting person's telephone number displayed on the display, judged that urgency etc., operated the call-in response immediately according to that decision, did actuation of an answer hold or arrival-of-the-mail refusal, or had ignored arrival of the mail.

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**EFFECT OF THE INVENTION**

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[Effect of the Invention] According to this invention which consists of the above configurations, the following effectiveness is acquired.

- (1) In invention according to claim 1, the body of a portable telephone of a fold-up formula is only opened, and a ringer tone can reduce a halt or its sound volume.
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**TECHNICAL PROBLEM**

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**MEANS**

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**OPERATION**

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[Function] A closing motion detection means will detect this and this invention equipped with said closing motion detection means by such configuration will output a signal to a control means, if the body of a portable telephone is opened at the time of arrival of the mail. A control means reduces the amount of ringer tones to the sound volume which was made to stop the ringer tone outputted from a ringer tone output means based on this signal, or was set up beforehand.

[0010] Moreover, this invention which comes to assign said two or more keys to volume control reduces the amount of ringer tones to the sound volume which the ringer tone was stopped or was set up beforehand by operating any of two or more keys they are at the time of arrival of the mail.

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**DESCRIPTION OF DRAWINGS**

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**[Brief Description of the Drawings]**

**[Drawing 1]** It is the block diagram of the first example of a portable telephone with this invention ringer tone regulating function.

**[Drawing 2]** It is the block diagram of the second example of a portable telephone with this invention ringer tone regulating function.

**[Description of Notations]**

- 1 Antenna
- 2 Transceiver Circuit
- 3 Control Circuit
- 4 Ringer Tone Output Circuit
- 5 Buzzer
- 6 Key Switch
- 7 Closing Motion Detection Means
- 8 Store Circuit
- 9 Display
- 10 Speech Processing Section
- 11 Headset

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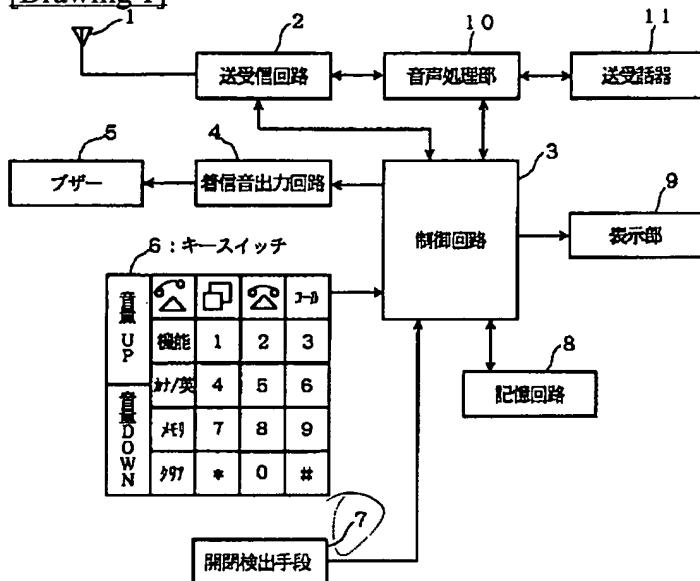
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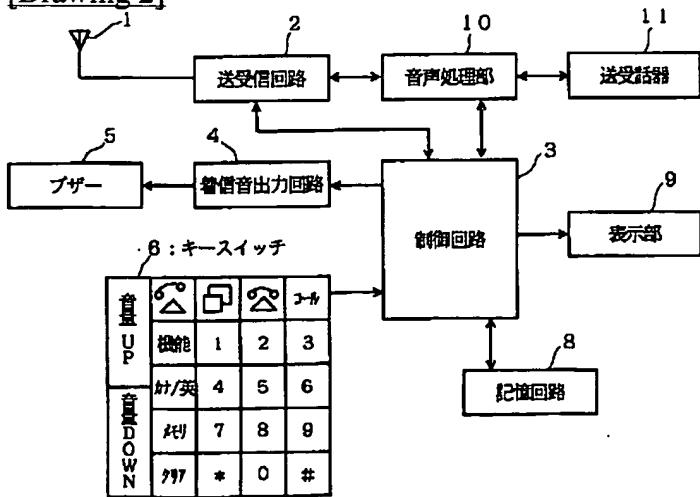
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## DRAWINGS

## [Drawing 1]



## [Drawing 2]



[Translation done.]